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(54) **ELECTRONIC MASSAGE MANAGEMENT SYSTEM**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 76 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **09/620,094**

(22) Filed: **Jul. 20, 2000**

Related U.S. Application Data

(63) Continuation of application No. 09/323,718, filed on Jun. 1, 1999, now abandoned, which is a continuation of application No. 08/897,777, filed on Jul. 21, 1997, now Pat. No. 6,122,632.

(51) **Int. Cl.**^{7} **G06F 17/30**

(52) **U.S. Cl.** **707/10**; 707/4; 707/104.1

(58) **Field of Search** 707/4, 10, 104.1; 705/26, 70; 709/205, 226; 706/45

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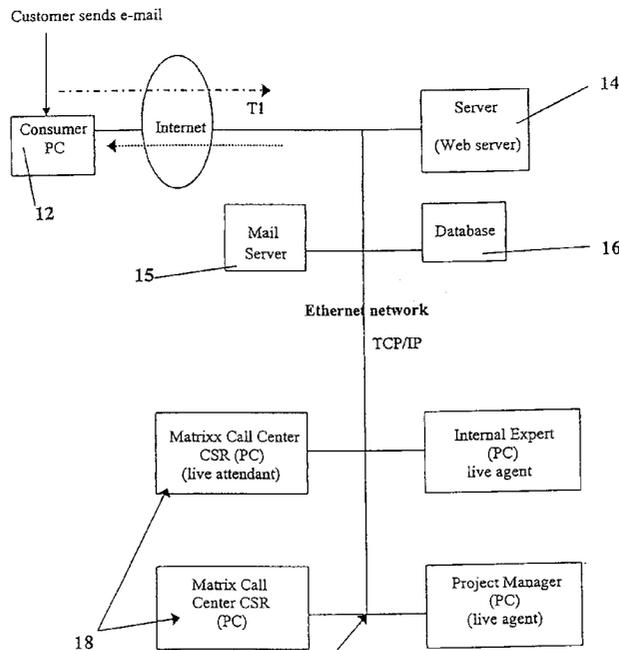|			
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Primary Examiner—Diane D. Mizrahi
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(57) **ABSTRACT**

An electronic message, or e-mail, management system having a digital computer for accepting e-mail messages; a program interface for automatically transferring received electronic messages to a database; a structured database for storing the received electronic messages in a predetermined format; and an interface for allowing a customer service representative, at a remote computer, to access, and respond to, the electronic messages stored at the database.
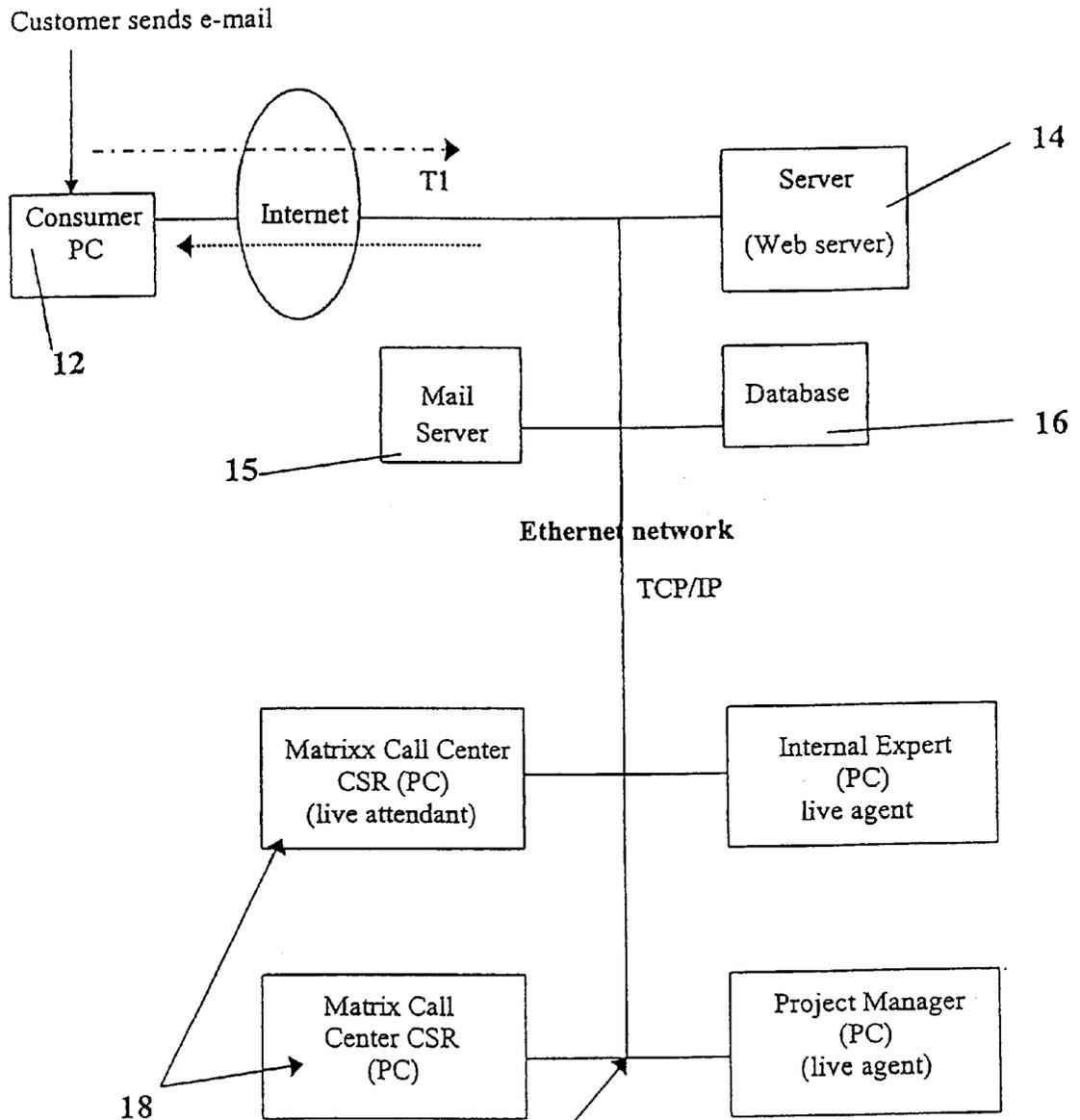
26 Claims, 34 Drawing Sheets

Customer sends e-mail

Consumer PC

12

Internet

T1

Server (Web server)

14

Mail Server

15

Database

16

Ethernet network

TCP/IP

Matrixx Call Center CSR (PC) (live attendant)

Internal Expert (PC) live agent

Matrix Call Center CSR (PC)

18

Project Manager (PC) (live agent)

Figure 1

10

Figure 2

30 — CSR LOGS IN

32 — Accepts ID number and password

34 — Valid login? — No

Yes

Accept login

36 — Display page having the main navigational buttons

38 — E-mail, admin., Reports, History, or Password?

e-mail → Go to e-mail flowchart

admin. → Go to administration flowchart

reports → Go to Reports flowchart

history → Go to History flowchart

password → Go to password flowchart

Figure 3

Figure 4A

No response
needed

Does the CSR
want to reply,
ask an expert, or
not respond?

86

update the database to
indicate that no
response was needed
for that message

88

Ask an expert

Reply

Go to the Ask an
expert flowchart

Go to the Reply
flowchart

Figure 4B

```
                                    ┌─────────── 90
        ┌──────────────────────┐
        │   Display the Ask the │
        │     Expert page       │
        └──────────────────────┘
                    │
                    │              ┌─────────── 92
                    ▼
        ┌──────────────────────┐
        │   The CSR selects an  │
        │   expert to handle the│
        │      question         │
        └──────────────────────┘
                    │
                    │              ┌─────────── 94
                    ▼
        ┌──────────────────────┐
        │   Send the message to │
        │   the selected expert │
        │                       │
        └──────────────────────┘
                    │
                    │              ┌─────────── 96
                    ▼
        ┌──────────────────────┐
        │  Update the database  │
        │  to indicate that the │
        │   message has been    │
        │   sent to an expert   │
        └──────────────────────┘
```

Figure 5

98

Does CSR want to send standard or custom response?

standard

102

Standard responses are retrieved from the database; CSR selects a standard response

104

Add a custom response?

Yes

Custom

100

CSR types in custom response

No

106

Has the message been flagged for QA?

Yes

No

108

CSR clicks button to submit the response to QA

112

CSR clicks on button to send message

110

Update database to indicate that the response is to be reviewed by QA before it is sent

114

Message is sent to another customer

116

Update database to indicate that the message was replied to

Figure 6

118

```
Display page having a table
of responses that need to be
reviewed through QA
(pending QA)
```

120

```
CSR with QA privileges
clicks on a message to be
reviewed
```

122

```
Display Message Information
page with CSR reply
```

124   126   128

```
CSR denies,        accept
accepts, or does  ───────▶   The reply is   ───────▶   The database is
nothing with the              sent                     updated to indicate
reply?                                                 the reply has been
                                                       reviewed & sent
```

Do nothing

deny

```
Return to QA
Screen
```

```
Update database to
indicate that the
message has been
denied
```

130

Figure 7

Figure 8

148

What type of report is needed?

By category, by day, by "no response needed", by open message summary, by QA, by messages initiated?

category

day

No resp. needed

Mail initiated

Open message

| Retrieve data and display data in interface format | Retrieve data and display data in interface format | Retrieve data and display data in interface format | Retrieve data and display data in interface format | Retrieve data and display data in interface format |

150   152   154   156   158

Figure 9

Fig. 10

LOGIN RESULTS - INTERNET BROWSER

FILE EDIT VIEW GO FAVORITES HELP

BACK FORWARD STOP REFRESH HOME SEARCH FAVORITES PRINT FONT MAIL

LINKS

ADDRESS http://206.126.161.12/scripts/login/login.idc

YOU HAVE BEEN AUTHORIZED TO ENTER CYBERESPONSE.

CONTINUE ——17

WHAT'S NEW?

EMAIL RESPONSE

Fig. 11

NA...

EMAIL — 40

ADMINISTRATION — 42

REPORTS — 44

HISTORY — 46

Fig. 12

HOME PAGE – INTERNET BROWSER

EMAIL RESPONSE

SELECT A GROUP:

○ cyberesponse @ _____ .net (7)

SELECT A GROUP TO QA:

○ cybersponse @ _____ .net (0)

START   CONTR.   DIAL...   MAT...   MICRO...   HO...   MICRO.   NAVI...   MICRO.   6:54AM

Fig. 13

GROUP ADDRESS: cyberesponse @____.net

62

MESSAGE	RESPONSE	STATUS	ASSIGNED	RECEIVED	ORIGINATOR SUBJECT
○ 31	42	OPENED	JENNY BOTTS	3/24/1997	KAREN MUSSON(kmusson@_.net) TEST FOR MARSHALL
○ 60	69	OPENED	SHERRI	3/27/1997	JENNY BOTTS(jbotts@_.net) TEST 27
○ 66	84	OPENED	JENNYBOTTS	3/27/1997	JENNY BOTTS(jbotts@_.net) TEST 33
○ 69	78	OPENED	JERRY	3/27/1997	JENNY BOTTS(jbotts@_.net) TEST 36
○ 72	81	OPENED	MARSHALL	3/27/1997	JENNY BOTTS(jbotts@_.net) TEST 39
○ 95	105	OPENED	SHERRI	4/14/1997	KAREN MUSSON(kmusson@_.net) CYBERESPONSE QUESTION
○ 129	139	OPENED	CKACMARSKY	4/24/1997	CHRIS KACMARSKY(ckacmarsky @_.net) TEST 12
○ 130	140	OPENED	ISD	4/24/1997	CHRIS KACMARSKY(ckacmarsky @_.net) TEST 13
○ 142	152	UNOPENED	UNASSIGNED	5/1/1997	BOB EXAM (bexam@_.net) TEST
○ 143	153	UNOPENED	UNASSIGNED	5/1/1997	BOB EXAM (bexam@_.net) TEST
○ 144	154	UNOPENED	UNASSIGNED	5/1/1997	BOB EXAM (bexam@_.net) TEST
○ 145	155	UNOPENED	UNASSIGNED	5/1/1997	BOB EXAM (bexam@_.net) TEST
○ 146	156	UNOPENED	UNASSIGNED	5/1/1997	BOB EXAM (bexam@_.net) TEST
○ 147	157	UNOPENED	UNASSIGNED	5/1/1997	BOB EXAM (bexam@_.net) TEST

70

64 QA MESSAGES

MESSAGE	RESPONSE	STATUS	ASSIGNED QA ASSIGNED	RECEIVED	ORIGINATOR SUBJECT
○ 148	158	FROM QA	ISD ISD	5/1/1997	BOB EXAM (bexam@_.net) TEST
149	159	PENDING QA	ISD UNASSIGNED	5/1/1997	BOB EXAM (bexam@_.net) TEST

66 EXPERT MESSAGES

MESSAGE	RESPONSE	STATUS	CSR ASSIGNED EXPERT	RECEIVED	ORIGINATOR SUBJECT
○ 153	163	FROM EXPERT	ISD SHERRI	5/5/1997	KAREN MUSSON(kmusson@_.net) BUSINESS DIVISION QUESTION
○ 151	161	WAIT FOR EXPERT	ISD jbotts a _.net	5/2/1997	TEST(dwi@_.net) TEST

http://206.126.161.12/script/response/queued.idc

Fig. 14

☐ MESSAGE – INTERNET BROWSER

MESSAGE INFORMATION

MESSAGE : 10

CSR RESPONDING : KARENMUSSON

TO : cyberesponse@___.net

ORIGINATOR : KARENMUSSON (kmusson@___.net)

RECEIVED : 3/10/1997

SUBJECT : INTERNATIONAL

CATEGORIES

SELECT ONE OR MORE CATE-
GORIES, THEN PRESS "APPLY."
THE MESSAGE MUST BE CATE-
GORIZED BEFORE 'REPLY NOW'
IS PRESSED

BENEFITS
OTHER SERVICES
REPORTING
SYSTEM FEATURES
TEST
TRAINING

APPLY

REPLY NOW | ASK AN EXPERT | NO RESPONSE NEEDED | RETURN TO QUEUED MESSAGES

MESSAGE:

CAN YOU HANDLE INTERNATIONAL AND/OR MULTILINGUAL EMAIL?

THANKS

Fig. 15

Fig.16

☐ MESSAGE – INTERNET BROWSER   – ☐ ✕

ASK AN EXPERT

[SEND INQUIRY]   [RETURN TO MESSAGE]

○ dwilson
⊙ JennyBotts
○ dwilson@____.net
○ jbotts@____.net
○ kmusson@____.net

xxxx ˟xxxʳxxxxxx ORIGINAL MESSAGE ˟ʌxxʳxxxˋ

CAN YOU HANDLE INTERNATIONAL AND/OR MULTILINGUAL EMAIL?
THANKS

JERRY, CAN WE HANDLE INTERNATIONAL IN ALL THE CALL CENTERS OR JUST LOCALLY?

Fig. 17

☐ MESSAGE RESPONSE — INTERNET BROWSER   ☐ ☐ ☒

RESPONSE FORM	SUBMIT FOR QA	SAVE RESPONSE

DIALOGUE STATUS   ○ OPEN ○ CLOSED

MESSAGE RESPONSE

───── ORIGINAL MESSAGE ─────
ON MARCH 10, 1997 22:52, KARENMUSSON (kmusson a ——.net)
WROTE:
CAN YOU HANDLE INTERNATIONAL AND/OR MULTILINGUAL
EMAIL?
THANKS

STANDARD RESPONSES

☐ THIS IS A STANDARD RESPONSE TO A
   SAMPLE MESSAGE.

☒ CSRs ARE TRAINED EXPERTS IN CLIENT'S
   PRODUCTS AND PROPER NETIQUETTE.

☐ THE CYBERESPONSE EMAIL MANAGE-
   MENT SYSTEM ENSURES ALL EMAIL
   INQUIRIES ARE SENT TO A CUSTOMER
   SERVICE REPRESENTATIVE.

☐ MESSAGE RESPONSE DATA IS AVAILABLE
   FOR AD HOC AND STANDARD IMMEDIATE
   PRODUCTION REPORTING.

☐ QUALITY CONTROL REPORTS ARE
   AVAILABLE BY CSR

GROUP ADDRESS: cyberesponse a _____.net

MESSAGE	RESPONSE	STATUS	ASSIGNED	RECEIVED	ORIGINATOR SUBJECT
15	15	PENDING QA	SHERRI	3/11/1997	JENNYBOTTS(jbotts@_____.com) RESPONSE TIME
65	74	PENDING QA	DWILSON	3/27/1997	JENNYBOTTS(jbotts@_____.net) TEST 32
68	77	PENDING QA	KARENMUSSON	3/27/1997	JENNYBOTTS (jbotts @_____.net) TEST 35
73	82	PENDING QA	DWILSON	3/27/1997	JENNYBOTTS (jbotts@_____.net) TEST 40
75	85	PENDING QA	DWILSON	4/9/1997	DWILSON(dwilson@_____.net) TEST
76	86	PENDING QA	DWILSON	4/9/1997	DWILSON(dwilson@_____.net) TEST 2
77	87	PENDING QA	DWILSON	4/9/1997	DWILSON (dwilson@_____.net) TEST 3
148	158	PENDING QA	ISD	5/1/1997	BOB EXAM(bexam@_____.net) TEST
149	159	PENDING QA	ISD	5/1/1997	BOB EXAM(bexam@_____.net) TEST

Fig.18

ADMIN PAGE – INTERNET BROWSER

SYSTEM ADMINISTRATION

SELECT A SECTION TO UPDATE

○ CSR
○ GROUP
○ MESSAGES

Fig. 19

Fig. 20
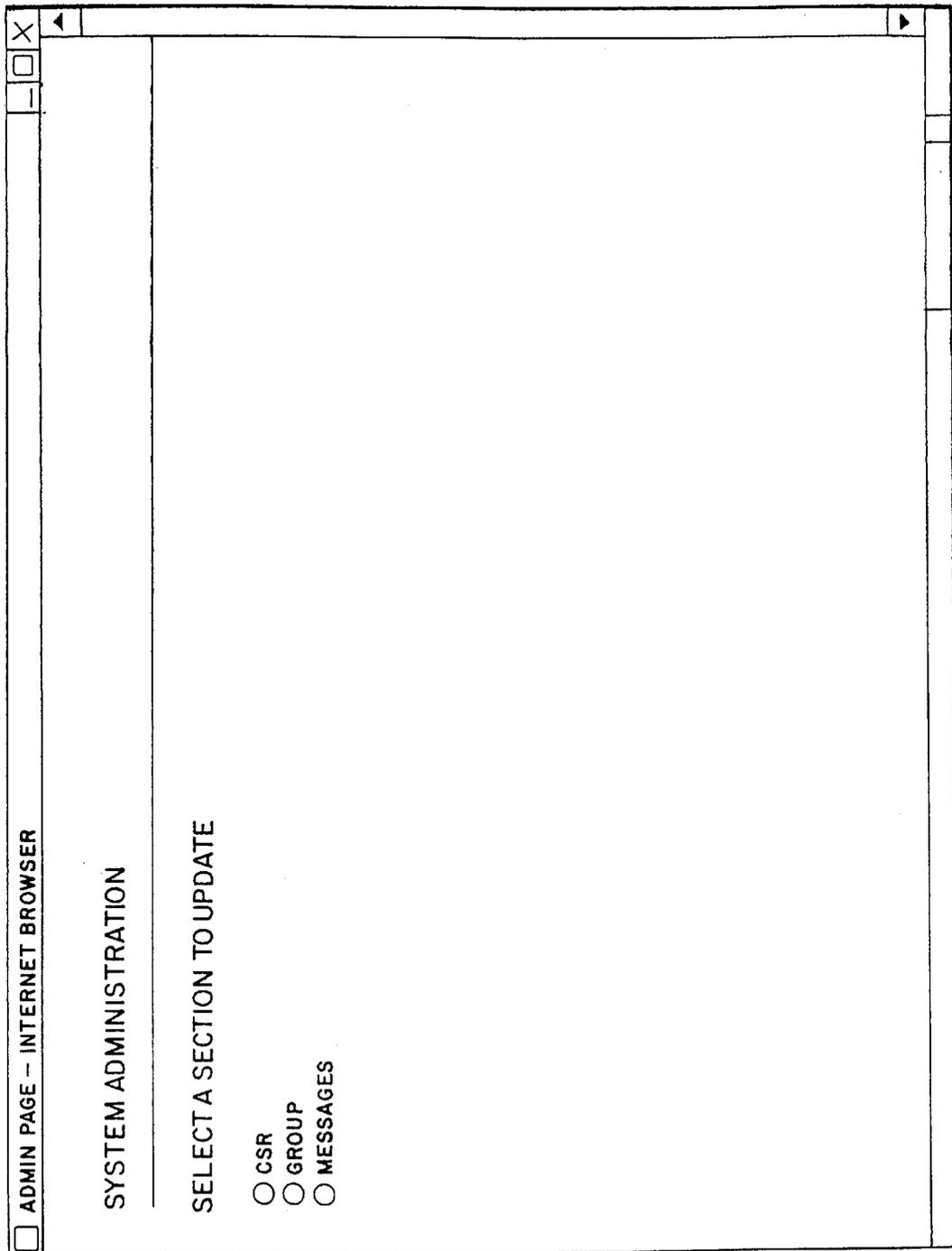
□ ADMINISTRATIVE TASKS – INTERNET BROWSER   _ □ ✕

UPDATE CSR

COMPLETE THE FORM AND PRESS "APPLY" TO CHANGE THE CSR INFORMATION.

CSR ID   KARENMUSSON

PASSWORD   x x x x x

CONFIRM PASSWORD   x x x x x

CSR PRIVILEGES

MAY THE CSR ADMINISTR DATABASE TABLES?	○ NO	⊙ YES
MAY THE CSR GENERATE REPORTS?	○ NO	⊙ YES
MAY THE CSR PERFORM FINAL QA ON MESSAGE RESPONSES?	○ NO	⊙ YES
DOES THE CSR QUALIFY AS AN EXPERT?	○ NO	⊙ YES
MAY THE CSR MARK A MESSAGE AS "NO RESPONSE NECESSARY?	○ NO	⊙ YES
DO THE CSR RESPONSES NEED QA	○ NO	⊙ YES

GROUP PERMISSIONS

SELECT THE GROUP ADDRESS FOR WHICH THE CSR MAY RESPOND TO MESSAGES.

NONE
cyberesponse @ ____ .net

CSR ADMIN

SELECT NEW TO ADD A NEW CSR. OR, SELECT A CSR TO UPDATE.

○ NEW
○ DWILSON
○ JENNYBOTTS
⊙ KARENMUSSON

ADMINISTRATIVE TASKS – INTERNET BROWSER

cyberesponse@_____.net

| CATEGORY | CSRs | STANDARD RESPONSE | SIGNATURE | VIEW GROUP |

CURRENT CATEGORIES

BENEFITS   [RENAME.]   [DELETE]

OTHER SERVICES   [RENAME]   [DELETE]

REPORTING   [RENAME]   [DELETE]

SYSTEM FEATURES   [RENAME]   [DELETE]

TEST   [RENAME]   [DELETE]

ADD CATEGORY   [ADD]

DELETED CATEGORIES

GROUP ADMIN

SELECT A GROUP TO UPDATE.

⊙cyberesponse@_____.net

Fig. 21

Fig. 22
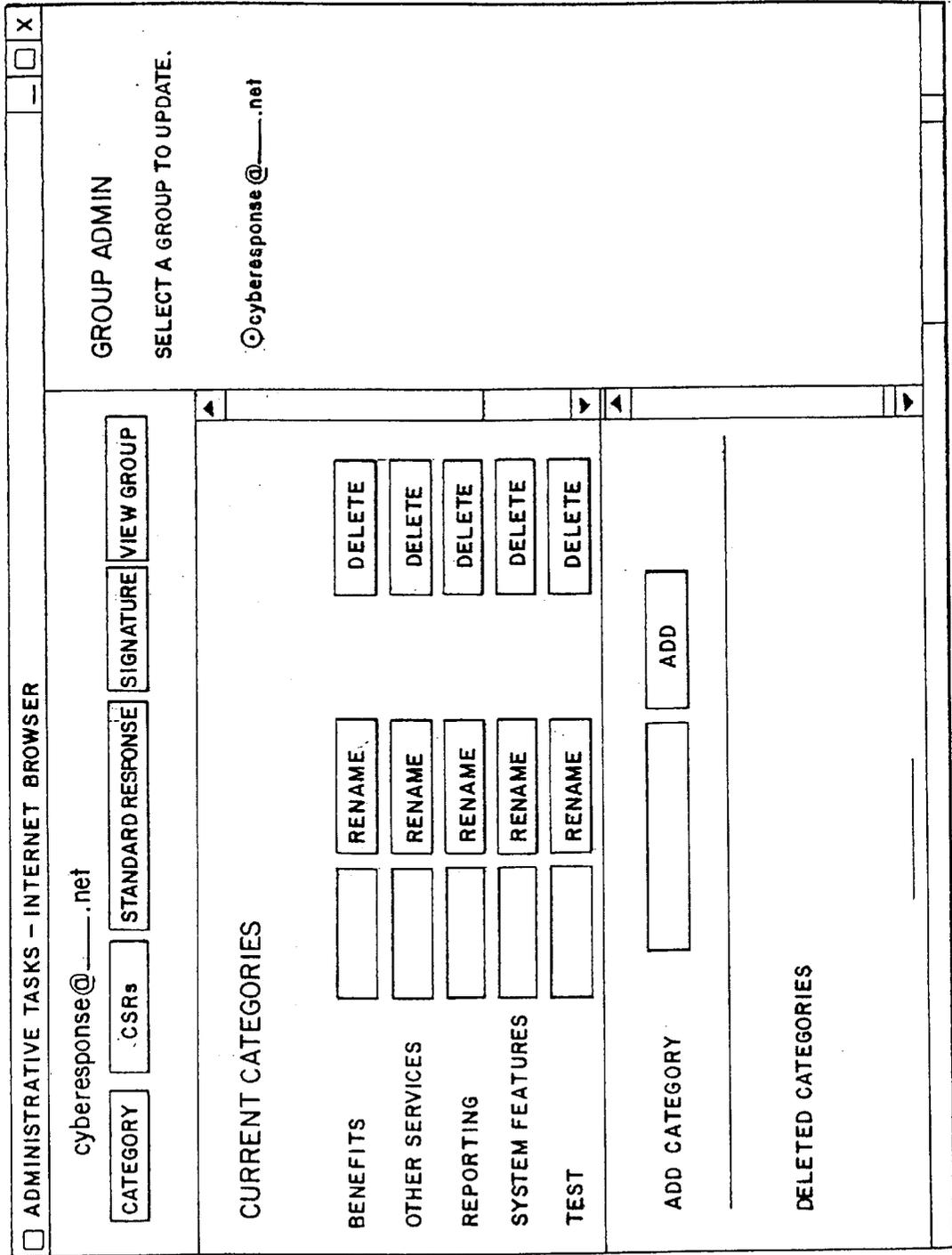
☐ ADMINISTRATIVE TASK — INTERNET BROWSER   _ ☐ ✕

cyberesponse@_____.net

| CATEGORY | CSRs | STANDARD RESPONSE | SIGNATURE | VIEW GROUP |

GROUP ADMIN

SELECT A GROUP TO UPDATE.

⊙ cyberesponse @ _____ .net

CSR PERMISSIONS

| NONE |
| DWILSON |
| JENNYBOTTS |
| KARENMUSSON |

HIGHLIGHTED CSRs ARE THE CURRENT CSRs THAT MAY RESPOND TO EMAIL ADDRESSED TO

cyberesponse@_____.net.

CLICK ON A CSR TO ADD OR REMOVE THE CSR FROM THE CURRENT LISTING. USING SHIFT+CLICK OR CTRL+CLICK WILL ALLOW MULTIPLE CSRs TO BE SELECTED OR DESELECTED.

CSR PERMISSIONS CAN ALSO BE ASSIGNED/REVOKED IN CSR ADMINISTRATION.

AFTER CSRs HAVE BEEN CHOSEN, PRESS "APPLY" TO SUBMIT THE CHANGES.

| APPLY |

☐ ADMINISTRATIVE TASKS – INTERNET BROWSER   ☐ ☐ ☒

GROUP ADMIN

SELECT A GROUP TO UPDATE.

⊙ **cyberesponse @ _____ .net**

cyberesponse @ _____ .net

| CATEGORY | CSRs | STANDARD RESPONSE | SIGNATURE | VIEW GROUP |

STANDARD RESPONSES

ADD

THIS IS A STANDARD RESPONSE TO A SAMPLE MESSAGE.

UPDATE
DELETE

CSRs ARE TRAINED EXPERTS IN CLIENT'S PRODUCTS AND PROPER NETIQUETTE.

UPDATE
DELETE

THE CYBERESPONSE EMAIL MANAGEMENT SYSTEM ENSURES ALL EMAIL INQUIRIES ARE SENT TO A CUSTOMER SERVICE REPRESENTATIVE.

UPDATE
DELETE

MESSAGE/RESPONSE DATA IS AVAILABLE FOR AD HOC AND

UPDATE

Fig. 23

☐ ADMINISTRATIVE TASKS — INTERNET BROWSER   ☐ ☐ ☒

GROUP ADMIN

cyberesponse @ _____ .net

SELECT A THEME TO UPDATE.

| CATEGORY | CSRs | STANDARD RESPONSE | SIGNATURE | VIEW GROUP |

⊙ cyberesponse @ _____ .net

SIGNATURE

THANK YOU FOR CONTACTING _____ .

◄ | ►

APPLY

Fig. 24

Fig. 25

☐ ADMINISTRATIVE TASKS — INTERNET BROWSER | — | ☐ | ✕

cyberesponse @ _____ .net

| CATEGORY | CSRs | STANDARD RESPONSE | SIGNATURE | VIEW GROUP |

GROUP ADMIN

SELECT A GROUP TO UPDATE.

⊙ cyberesponse@_____.net

CATEGORIES

BENEFITS
OTHER SERVICES
REPORTING
SYSTEM FEATURES
TEST

◄ _____ ►

CSR PERMISSIONS

DWILSON
JENNY BOTTS
KARENMUSSON

◄ _____ ►

SIGNATURE

NO SIGNATURES

STANDARD RESPONSES

I. THIS IS A STANDARD RESPONSE TO A SAMPLE MESSAGE.

Fig. 26

REPORTS PAGE – INTERNET BROWSER

GENERATE REPORTS

SELECT A REPORT

REPORT NAME	REPORT CONTENTS

CATEGORY
- THE NUMBER OF RESPONSES PER CATEGORY

DAILY
- NUMBER OF MESSAGES RECEIVED AND RESPONSES SENT DURING A DAY.
- NUMBER OF MESSAGES WITHIN AND EXCEEDING QUALITY ASSURANCE STANDARDS

NO RESPONSE NEEDED
- MESSAGES THAT HAVE BEEN MARKED AS NO RESPONSE NECESSARY

OPEN MESSAGE
- MESSAGES THAT HAVE. AN OPEN DIALOGUE STATUS

QA
- MESSAGES TO CSRs REGARDING QA.

REPLIES
- AN EMAIL MESSAGE

Fig.27

☐ REPORTS PAGE – INTERNET BROWSER

[DAILY]
- NUMBER OF MESSAGES RECEIVED AND RESPONSES SENT DURING A DAY
- NUMBER OF MESSAGES WITHIN AND EXCEEDING QUALITY ASSURANCE STANDARDS

[NO RESPONSE NEEDED]
- MESSAGES THAT HAVE BEEN MARKED AS NO RESPONSE NECESSARY

[OPEN MESSAGE]
- MESSAGES THAT HAVE AN OPEN DIALOGUE STATUS

[QA]
- MESSAGES TO CSRs REGARDING QA

[REPLIES]
- AN EMAIL MESSAGE
- REPLIES TO A MESSAGE

[RESPONSE TIME]
- THE TIME A MESSAGE WAS RECEIVED, OPENED AND SENT
- THE TIME BETWEEN THE MESSAGE BEING RECEIVED AND THE MESSAGE BEING OPENED
- THE TIME BETWEEN THE MESSAGE BEING OPENED AND THE REPLY BEING SENT
- THE TIME BETWEEN THE MESSAGE BEING RECEIVED AND THE REPLY BEING SENT
- IF THE TIME BETWEEN THE MESSAGE BEING RECEIVED AND REPLIED TO FAILS TO MEET QUALITY ASSURANCE STANDARDS

Fig.28

NO RESPONSE NEEDED REPORT QUERY FORM — INTERNET BROWSER

NO RESPONSE NEEDED REPORT

COMPLETE THE FORM TO INDICATE THE GROUP ADDRESS AND THE TIMEFRAME FOR THE REPORT TO BE GENERATED

1. SELECT A GROUP ADDRESS

⊙ cyberesponse @ _____ .net

2. SELECT A DATE RANGE (DATE RECEIVED)

FROM: | MARCH ▸ | | 10 ▸ | | 1997 ▸ |

TO: | MARCH ▸ | | 11 ▸ | | 1997 ▸ |

| SUMMARY REPORT |

Fig. 29

☐ NO RESPONSE NEEDED SUMMARY – INTERNET BROWSER

NO RESPONSE NEEDED SUMMARY

MESSAGES SENT TO cyberesponse@_____.net

FOR DATES 03/10/1997 12:00AM TO 03/11/1997 11:59 PM

RECEIVED	MARKED NRN	CSRID	ORIGINATOR	SUBJECT
▸ 3/10/1997	3/10/1997	KAREN MUSSON	kmusson@____.net	TEST MESSAGE FROM WEB PAGE

TOTAL NO RESPONSE NEEDED MESSAGES

QUERY PAGE

OPEN MESSAGE SUMMARY – INTERNET BROWSER

OPEN MESSAGE SUMMARY

MESSAGE SENT TO cyberesponse@____.net

STATUS	RECEIVED	CSR ASSIGNED	ORIGINATOR	SUBJECT
▲ OPENED	3/10/1997	DWILSON	dwilson @____.net	SAMPLE MESSAGE
▲ OPENED	3/10/1997	JENNYBOTTS	jbotts @____.net	TEST 03/10/97
▲ UNOPENED	3/10/1997		jbotts @____.net	DO YOU ANSWER THE EMAILS?
▲ UNOPENED	3/10/1997		jbotts @____.net	CYBERESPONSE LOCATION
▲ OPENED	3/10/1997	KARENMUSSON	jbotts @____.net	REPORTING
▲ WAIT FOR EXPERT	3/10/1997	KARENMUSSON	jbotts @____.net	THRESHOLD
▲ UNOPENED	3/10/1997		kmusson@____.net	QUESTION ABOUT CYBERESPONSE
▲ UNOPENED	3/10/1997		kmusson@____.net	CYBERESPONSE SERVICE
▲ OPENED	3/10/1997	KARENMUSSON	kmusson @____.net	INTERNATIONAL
▲ UNOPENED	3/10/1997		kmusson@____.net	____ QUESTION

TOTAL OPEN MESSAGES   10

QUERY PAGE

Fig. 30

REPLIES REPORT

COMPLETE FORM TO INDICATE THE MESSAGE ADDRESSES, THE CSR, THE TIME FRAME FOR WHICH
THE REPORT IS TO BE GENERATED. PRESS "GET REPORT" TO RETRIEVE THE REPORT.

MESSAGES SENT TO   CSR

ALL ADDRESSES   ALL CSRs
cyberesponse@_____.com   JENNYBOTTS
                                          KARENMUSSON.

FOR DATES:

⊙ RANGE (THE DATE(S) MESSAGE WAS RECEIVED)

FROM: SEPTEMBER ▼   I ▼   1996 ▼

TO: SEPTEMBER ▼   30 ▼   1996 ▼

                      GET REPORT

○ CUMULATIVE

Fig. 31

Fig. 32

RESPONSE TIME REPORT

COMPLETE THE FORM TO INDICATE THE MESSAGE ADDRESS AND THE TIME FRAME FOR THE REPORT TO BE GENERATED.

MESSAGES SENT TO

⊙ cyberesponse @ _____ .com

FOR DATES:

⊙ RANGE (THE DATE(S) THE MESSAGE WAS RECEIVED)

FROM: [AUGUST ▼]   [I ▼]   [1996 ▼]

TO: [SEPTEMBER ▼]   [30 ▼]   [1996 ▼]

○ CUMULATIVE

QA STANDARD

ENTER THE ACCEPTABLE NUMBER OF HOURS BETWEEN A MESSAGE BEING RECEIVED AND A REPLY BEING SENT:

[48]

[GET REPORT]

Fig. 33

RESPONSE TIME REPORT

MESSAGES SENT TO cyberesponse @_____.com
QA STANDARD: MORE THAN 48 HOURS BETWEEN MESSAGE RECEIPT AND REPLY EXCEEDS STANDARD
ALL DATES

SUMMARY

QA STANDARD

31 OF 31 RECORDS (100%) WITHIN QA STANDARD
0 OF 31 RECORDS (0%) EXCEED QA STANDARD

TIME BETWEEN RECEIVED AND OPENED

AVERAGE:	8	HOURS
TOTAL:	236	HOURS
MAXIMUM:	93	HOURS
MINIMUM:	0	HOURS

TIME BETWEEN OPENED AND REPLIED

AVERAGE:	0	HOURS
TOTAL:	1	HOURS
MAXIMUM:	1	HOURS
MINIMUM:	0	HOURS

TIME BETWEEN RECEIVED AND REPLIED

AVERAGE:	1	HOURS
TIME:	28	HOURS
MAXIMUM:	3	HOURS
MINIMUM:	0	HOURS

ELECTRONIC MASSAGE MANAGEMENT SYSTEM

This application is a continuation of U.S. patent application Ser. No. 09/323,718 filed Jun. 1, 1999 and now abandoned, which is a continuation of U.S. patent application Ser. No. 08/897,777 filed Jul. 21, 1997, now U.S. Pat. No. 6,122,632 both of which are incorporated herein by reference.

BACKGROUND AND SUMMARY OF THE INVENTION

The present invention relates to an electronic message management system and method, and more particularly, to an electronic message storage, tracking, management, and response method and system.

The number of Internet users continues to grow at an astounding rate. Accordingly, Internet Web sites have become an important way to communicate with customers. Internet Web sites are being used to send electronic message inquiries to customer service departments of many companies. Accordingly, as with traditional telephone customer service departments, customers expect timely responses to their e-mail inquiries.

An analysis was performed on the proficiency of companies in responding to e-mail inquiries received through their Web site. The study found that:

17% of the companies responded via e-mail;

27% of the companies did not respond to the e-mail inquiries;

8% responded via the U.S. postal service; and

48% of the companies did not have any mechanism for accepting e-mail inquiries.

Additionally, of the small percentage of companies actually responding to e-mail inquiries, many of those companies took 3–4 weeks to respond to e-mail inquiries, with many of the inquiries never being answered. Many popular Web sites generate tens of thousands of hits, and thousands of e-mail inquiries, per month. As the popularity of the Internet increases, the number of e-mail inquiries sent will continue to increase.

At the present time, electronic message inquiries are handled manually by customer service departments. In other words, the e-mail is sent directly to a customer service Mail server. The e-mail message inquiries are then read by a customer service representative who is assigned to respond to the e-mail inquiries. The customer service representative may either respond to the message or may refer the message to another customer service representative who is more qualified to answer the inquiry. Currently, the process of forwarding the messages to responsible customer service representatives (CSRs) is accomplished manually. In other words, either the forwarding CSR clicks the "forward" button to send the message to the responsible CSR or the e-mail inquiry is actually printed out and physically handed to the responsible CSR. The responsible CSR then responds to the e-mail inquiry.

This manual process of responding to electronic messages results in a lack of electronic message management and a failure to provide any type of quality assurance on the message responses. For example, in a traditional system, once an e-mail inquiry is received at the designated mail server a customer service representative may access that e-mail message by using any known e-mail program (e.g. Eudora). If the customer service representative cannot answer the message, he must refer that inquiry to another

CSR that can answer the question. With these known systems, the CSR must "manually" forward the inquiry to another responsible CSR able to take the inquiry. The e-mail is "manually" forwarded, for example, by designating the e-mail address of the responsible CSR and clicking the "forward" button in the mail program. Once the responsible CSR receives the forward inquiry, he or she may respond to the inquiry.

Accordingly, these traditional system are not well suited to handle a large load of electronic message inquiries. The manual forwarding of inquiries to responsible CSRs may take a considerable amount of time when there are thousands of inquiries and where there are many different CSRs (e.g. one to take billing inquiries, one to take technical support inquiries, one to take dealer locator inquiries). The time needed to initially read each message, to determine who the responsible CSR is, to determine the location of the responsible CSR, and to forward the message to the responsible CSR for response, results in long response times.

Additionally, these traditional systems do not provide any efficient means to provide quality assurance and electronic message tracking. For example, once the responsible CSR responds to the message, it is sent to the customer without being reviewed for appropriate content. This lack of quality control may result in inappropriate, or inaccurate, responses being sent to customers and accordingly, damage to valuable customer relations.

Additionally, in these known systems, the manual forwarding of electronic message inquiries to responsible CSRs results in a lack of message status tracking. In these known electronic messaging systems it is virtually impossible to administer the status of the electronic message inquiries, to determine what the inquiries were about, who the responsible CSR is, which inquiries have been responded to, and which inquiries are still in need of attention. For example, as an illustration, assume that in one week Company "Fortune 500" receives 100,000 e-mail inquiries. Assume that the e-mail messages were distributed as follows:

25,000 messages were sent to 100 different technical support CSRs;

25,000 messages were sent to 100 different billing CSRs;

25,000 messages were sent to 100 different product CSRs;

5,000 messages were sent to 20 different dealer locator CSRs; and

20,000 messages were sent to 100 general CSRs.

With traditional e-mail messaging systems, the only way that these different CSRs can obtain access to the appropriate e-mail inquiry is to either:

1.) manually forward the e-mails to the responsible CSR;

2.) print out the e-mail message and physically deliver it to the responsible CSR; or

3.) have the original e-mail message sent directly to the different e-mail addresses of each CSR.

All of these methods would be inefficient for distributing e-mail inquiries to responsible CSRs and, accordingly, for the subsequent responding to the 100,000 e-mail messages.

Additionally, with these known systems, it would be virtually impossible to provide any administrative tracking or quality assurance on these 100,000 e-mail inquiries. Once the e-mail inquiry has been forwarded to the responsible CSR, administration could not efficiently track the status of the inquiry (i.e. responded to or still pending) or the content of the responses being sent. In these known systems, the individual CSR would have to individually inform administration of the status of each assigned e-mail inquiry and forward each response to administration for approval.

As the popularity of the Internet increases, electronic message communication will become a standard and indispensable form of communication. Accordingly, companies need to implement e-mail communication with their customers. Additionally, many companies are, and will be, receiving thousands of electronic message inquiries per week. Accordingly, there is a need for an electronic message management system that provides for the efficient storage, administration, tracking and reporting of customer inquiries. Additionally, an electronic message management system is needed which will allow the generation of timely responses to electronic message inquiries. The present invention provides such an electronic message management system that provides the following advantages over existing e-mail programs:

1.) provides an automatic interface to a structured database for forwarding all electronic messages;

2.) provides access to the database by authorized CSRs, from remotely located computers;

3.) stores the electronic messages by predetermined attributes (e.g. time the inquiry was received, the e-mail address of the customer, the status of the message) so that the e-mail inquiries can be retrieved by any, or all, of the attributes;

4.) allows administrators to provide quality assurance reviews on selected responses before sending the message to the customer;

5.) provides updates to the interface based on CSR or administrator activities so that the status of all electronic messages are current;

6.) provides a list of authorized CSRs that may have access to the electronic messages in the interface, and allows customized settings of individual CSR privileges;

7.) provides security against hackers and viruses;

8.) provides a historical record of all electronic messages from each customer;

9.) interfaces the CSRs to a database containing predefined, standard, responses for frequently asked questions;

10.) allows the forwarding of the message to the relevant expert, the database being updated to indicate that the message has been referred to an expert;

11.) tracks the responses to all electronic message inquiries and updates the database accordingly;

12.) provides the ability to efficiently add additional CSRs, delete CSRs, add standard responses, and to provide custom reports;

13.) allows categorization of all electronic inquiries/messsages by client-defined categories;

14.) allows the reporting of the average response time of responses; and

15.) allows the monitoring of CSRs.

The present invention is preferably accomplished by: receiving electronic messages at an electronic network; forwarding the electronic messages to a database; storing the electronic messages based on predetermined message attributes; interfacing a customer service representative computer to allow electronic access to the electronic messages; transmitting one of the electronic messages from the database from the customer service representative computer based on one of the predetermined message attributes; displaying the transmitted message at said customer service representative computer; responding to the transmitted mes-

sage; and updating the database to indicate that the transmitted message has been responded to. The present system also allows for the administering and updating of the database according to specific application needs.

In addition to the features mentioned above, objects and advantages of the present invention will be readily apparent upon a reading of the following description.

BRIEF DESCRIPTION OF THE DRAWINGS

Novel features and advantages of the present invention, in addition to those mentioned above, will become apparent to those skilled in the art from a reading of the following detailed description in conjunction with the accompanying drawings wherein similar reference characters refer to similar parts and in which:

FIG. 1 illustrates one embodiment of the e-mail management system of the present invention;

FIG. 2 illustrates a block diagram illustrating one embodiment of the interface between the Web server and the database;

FIG. 3 illustrates a flow chart depicting the main operational steps of the e-mail management system;

FIG. 4A illustrates a flow chart depicting the main steps for accessing and responding to e-mail messages;

FIG. 4B illustrates a flow chart depicting the choices available to a CSR when handling e-mail messages in the system of the present invention;

FIG. 5 illustrates a flow chart depicting the steps for forwarding a message to an expert;

FIG. 6 illustrates a flow chart depicting the steps needed for replying to an e-mail message;

FIG. 7 illustrates a flow chart depicting the steps for providing a quality assurance review of e-mail responses;

FIG. 8 illustrates a flow chart depicting the steps for administering the e-mail system of the present invention;

FIG. 9 illustrates a flow chart depicting the steps for requesting a report; and

FIGS. 10–33 illustrate example screen shots from various pages of a preferred system of the present invention.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENT(S)

The preferred system herein described is not intended to be exhaustive or to limit the invention to the precise forms disclosed. They are chosen and described to explain the principles of the invention, and the application of the method to practical uses, so that others skilled in the art may practice the invention.

FIG. 1 illustrates one embodiment of the electronic management system 10 of the present invention. The system is preferably comprised of a server 14, a computer running mail server software 15, a database 16, and a customer service representative (CSR) computer 18. (A mail server 15 would not be needed if all electronic messages were submitted via Web page forms).

It is preferred that the server 14, the mail server 15, the database 16, and the CSR computer 18 be connected by a network. This network, preferably, makes up the call center network 10 of the present invention. For example, the network 10 may be an ethernet network based on Transfer Connect Protocol/ Internet Protocol (TCP/IP), although it is appreciated that other protocols may be used. The network 10 may also be part of a Wide Area Network (WAN). It is also appreciated that the components of the present system

may be variously arranged. For example, the server **14**, acting as a Web server, may also be configured as the mail server. However, in the preferred embodiment, as illustrated in FIG. **1**, the mail server **15** is a separate computer from the server **14**, and linked by the network.

The server **14** is generally a large capacity computer programmed for interfacing the CSR computer **18** and the database **16**. The server **14** is preferably a computer configured, or programmed, with Web server software. The server **14**, configured with Web server software (i.e. a "Web server"), serves as an interface between the CSR's computer **18**, configured with Web browser software, and the database **16**.

Typically, the network is connected by a T1 line to the Internet. Again, it is preferred that the server **14** be configured with Web server software with the capability to store, and transfer, Hypertext Markup Language (HTML) files and/or other scripts. As will be discussed, the CSR user interfaces are, preferably, viewed through a Web browser which accesses HTML code, or files, stored at the server **14**.

The customer's computer **12** is typically a personal computer having a modem for communicating with the call center network **10** facility, through the Internet. There are many advantages of using the Internet to communicate with the call center network, e.g., the customer has access to low cost clients (i.e. Web browsers), and the Web allows standard user interfaces and the ability to work across different platforms and applications.

In the preferred embodiment, the customer sends an electronic message, or inquiry, through the Internet, which finds its way to the mail server **15**. (Electronic messages include, but are not limited to, e-mail messages). If e-mail, the mail server **15** receives and accepts the electronic message (if the message is submitted from a Web page form it is interface directly to the database **16**). The mail server **15** is preferably a mail server program (e.g. Microsoft Exchange Server) that may either be located on the server **14**, or a separate computer electronically linked to the server **14** (i.e. the server **14** may be configured with both Web server software and mail server software or the server **14** configured with Web server software may be electronically connected to another computer **15** configured with mail server software).

In any case, the call center network **10** is configured to automatically transfer the received electronic messages to the database **16** for storage (i.e. without an intermediate manual step). Automatic transfer of the electronic messages may either be the automatic forwarding of the messages or having the messages pulled by the database. For example, a customer, using an e-mail client (e.g. Eudora) located on his computer **12** sends an e-mail message to companysupport@matrixx.net. The e-mail message travels through the Internet and enters the call center network **10**. The e-mail message is routed to the mail server **15** (This is accomplished through known mail protocols, for example, the mail server **15** is configured to accept and send Internet e-mail. When a mail message arrives it is sent to the server defined as the mail server in the Domain Name Service and MX records). The database **16** is programmed to automatically retrieve the e-mail messages from the mail server. In other words, a program may be written that retrieves predetermined received e-mail messages from the mail server and delivers them to the database **16** for storage. This program may be written in a number of different languages including C++ or SQL. The key being to provide automated integration between the mail server, the Web page, and any SQL stored procedures.

It should be appreciated that electronic messages from customers may be received in forms other than through traditional e-mail clients. For example, an electronic message may be sent from on-line forms embedded in company Web pages. These electronic messages may also be sent to the Web server **14**, and stored in the database **16**. For example, company Web sites may have on-line forms for submitting data or customer inquiries. These forms submit the message to a program, preferably written in C++, on the Web Server **14**. Once the program receives the message, it stores the message in the database **16**.

The database **16** is generally a storage area for the received electronic messages, including e-mails, and any other data required by the system (e.g. CSR data). It is preferred that the database **16** be a complete database management system (DBMS) which acts to organize and standardize data retrieval and storage, and is controlled by a language that helps to manipulate the data and allows querying of the database (e.g. SQL).

Although the database **16** may be a "flat file" it is preferred that the database **16** be a relational database. A relational database is a database that stores the information in tables, and where there are rules that define the relationship between the tables. Generally, the tables in a relational database are separated by different entities (e.g. all received e-mail messages, all data on CSRs, and predefined CSR standard responses). Generally, each row of a database table defines a subset of that particular entity where each column of that table defines a specific attribute, or category, for that entity. For example, a table storing all received e-mail messages may be stored as one table or entity. One row may be designated for each separate e-mail message where the message is given specific attributes defined by each column of that row (e.g., the time the message was received or the status of the message).

FIG. **2** illustrates a block diagram illustrating one embodiment of the interface **24** between the Web server **14** and the database **16**. The Web server **14** may be connected to more than one database **16**. The server **14** is adapted to interface with the database **16** so that the CSR may access, and retrieve, the data residing on the database **16**. For example, a server **14**, acting as a Web server **14**, generally consists of HTML files and electronically communicates with the CSR computers **18** using HyperText Transfer Protocol (HTTP). When a Web page is requested by the Web browser, HTML files are sent from the Web Server **14** to the CSR Web browser via HTTP. When data from the database **16** is needed, the Web page is programmed to retrieve the data from the database **16**.

Accordingly, the server **14** and the database **16** must be integrated for proper communication. However, in many cases the server **14**, acting as an interface to the database **16**, cannot communicate with standard databases without an interface **24** that maps the incoming query to the server **14** to the appropriate semantics in the database **16**.

In many databases today, Structured Query Language ("SQL") is used as the industry standard. SQL is a data language designed for creating, manipulating, and controlling relational databases. In order for a Web Server **14** to communicate with a database, a program extension **26** may be needed that converts the requests for data from the Web server **14** to a form that the database **16** will understand. For example, if the database **16** is a SQL database, the programmed program extension **26** will convert the data request from the Web Server **14** to SQL so that the database **16** will understand. However, in the preferred embodiment a pro-

gram extension **26** is not required. In the preferred embodiment, the Web Server speaks directly to the database with Internet Database Connector files ("IDC" files) which allow Web pages to interface with the data in the database **16**.

Additionally, in the preferred embodiment, an Open Database Connectivity (ODBC) layer is also programmed into the call center network **10**. ODBC is a standard interface between the database **16** and an application trying to access the data in the database **16**. Basically, the ODBC layer **28** allows any front end application to access the database **16** (in other words, the ODBC interface **28** is a program that provides a uniform way of calling data request to a database **16**).

Accordingly, in the preferred embodiment, a data request from the Web server **14** is sent via IDC files, which use ODBC-compatible SQL, to the ODBC interface **28**. The ODBC layer **28** converts the ODBC SQL calls into the predetermined database **16** native calls and then performs the database **16** interaction. The ODBC layer may also return the results of the data queries in a uniform way to the Web server **14**.

The operation of the invention can be understood with reference to the flowcharts of FIGS. **3–9** and corresponding screen shots illustrated in FIGS. **10–33**. The flowcharts of FIG. **3–9** describe the operational flow of one example system of the present invention. Screen shots from various stages of the system flow are depicted in FIGS. **10–27**, however not all screen shots have been provided.

As discussed above, customers submit electronic message inquiries (e.g. e-mail) to the call center network **10**. As discussed, the electronic messages are automatically transferred to a database **16** according to a predetermined format. Accordingly, the CSRs must access the electronic messages stored on the database **16** and respond to the inquiries.

A CSR accesses the database **16** from a computer station **18** electronically connected to the server **14**. It is preferred that the CSR stations **18** are connected to the server **14** via a TCP/IP network, however, it should be understood that other network and data transfer protocols may suffice. As discussed, the server **16** is a computer that interfaces the CSR computer **18** with the database **16**. It is preferred that the server **16** be configured with Web server software that allows the maintenance of HTML files, i.e. Web pages, that are used as interfaces to the database **16** (The following explanation of the invention and the flowcharts assume HTML as the preferred file format of the user interfaces although other formats may be used. Accordingly, the server **14** in the following explanation will be configured with Web server software, i.e. a Web server **14**).

To access the database **16**, a CSR points his Web browser to the appropriate address (e.g. a URL **13**) of the starting address of the call center interface files located on the Web server **14**. The Web server **14** transmits the HTML files of the CSR login page to the requesting CSR. (See the screen shot of FIG. **10**.) The CSR then logs in with his ID and his password block **30**. A program then checks to make sure the ID and the password are of a required form block **32** and sends the data to the database to make sure the CSR is allowed access block **34**. It is preferred that an ID and password checking program be embedded in the HTML. For example a script is sent to the browser where it is subsequently run by the browser running on the CSR computer **18**.

If the ID and password are of a required form, they are sent to the database to confirm the CSR may access the

messages. If the CSR is authorized, the HTML files informing the user of authorized access are sent to the CSR browser (see FIG. **11**). Upon clicking the "continue button" **17**, the main navigational page (see screen shot of FIG. **12**) are sent to the CSR computer **18**. The main navigational page is displayed block **36** via the Web browser at the CSR computer **18**. The call center interface may be programmed so as to require the changing of CSR passwords after a predetermined time. The main navigational page provides links, to HTML, or Web, page interfaces that allow the CSR to perform one of the main functions of the call center system **10**. The CSR may opt to:

1.) access and process the received electronic messages;
2.) provide administrative functions;
3.) create detailed reports;
4.) view the history of the received electronic messages; or
5.) change the passwords of the CSRs.

The CSR selects one of these options block **38** by clicking on the appropriate link in the main navigational page as illustrated in FIG. **12**. For example, if the CSR wants to respond to e-mail messages he clicks on the "e-mail" link **40**; if he wants to administer the system he clicks on the "Administration" link **42**; if he wants to view a report on system statistics he clicks on the "Reports" link **44**; if he wants to retrieve a history report he clicks on the "History" link **46**; if he wants to change passwords he clicks on the "Password" link; and if he wants to process mail, he clicks on the "Process Mail" link.

By clicking on the "e-mail" link **40** on the main navigational page, the database is queried to find which e-mail addresses the CSR may respond to and how many e-mails are waiting response. The results of the query are used to create the HTML file of the "E-mail Response" page. The "E-mail Response" page is sent to the CSR computer **18** from the Web server **14**. (FIGS. **4A** and **4B** illustrate a flow chart depicting the main steps for accessing and responding to e-mail messages.) Once the HTML files are received at the CSR computer **18**, the "E-mail Response" page, illustrated in FIG. **13**, is displayed block **52** via the Web browser.

The E-mail Response page preferably gives the CSR the option of either:

1.) selecting a group of e-mail messages to respond to if the CSR has permission to respond to the received electronic messages; or
2.) selecting a group of e-mail messages to provide quality assurance (QA) reviews block **54**.

E-mail messages are preferably grouped according to the e-mail addresses where the inquiry was sent. For example, all e-mail messages sent to a particular e-mail group are all preferably grouped together, stored together in the database **16**, and accessed together. For example, in FIG. **13**, there is only one group, "cyberesponse@matrixx.net". It is preferred that only the CSR groups to which each CSR has access be listed on the retrieved page. It is important to note that many CSRs (each linked by a computer **18**) can respond to a single address/group. Setting CSR privileges to groups is discussed in further detail below.

If the CSR wishes to access and respond to e-mail messages, the CSR selects a group to respond to block **56**. By selecting a group, the corresponding electronic messages received, and queued, for that group are retrieved block **58** from the database **16** and sent to the CSR computer **18** where they are displayed via HTML block **60**. An example of a "Queued Messages" page is illustrated in FIG. **14**. In the example page of FIG. **14**, the retrieved messages are categorized by:

1.) message number;

2.) response number;

3.) the status of the message;

4.) whether the message has been assigned;

5.) when the message was received;

6.) who sent the message, including the customer's e-mail address; and

7.) the subject of the message.

It is preferred that the messages be separated into three different subgroups: the General message subgroup **62**, the QA message subgroup **64**, and the Expert message subgroup **66**. The QA message subgroup contains all the messages that are awaiting QA review or messages denied by QA. All the messages in the Expert message subgroup are messages that are awaiting expert response or have been answered by an expert. The General message group contains all other messages that are still in queue. As illustrated in FIG. **14**, the status of the QA messages are either "From QA" or "Pending QA". Messages with the "From QA" status indicate that the message has been reviewed and denied by a CSR with QA privileges. Messages with the "Pending QA" status indicate that the message has not yet been reviewed. Similarly, the status of the Expert messages are either "From Expert", indicating the expert has responded to the CSR's inquiry, or "Wait for Expert", indicating the CSR is still waiting for the expert to respond. Messages in the General message subgroup **62** may indicate to which CSR the message has been assigned.

A CSR may have the option to retrieve messages from either the General message subgroup **62**, the QA message subgroup **64**, or the Expert message subgroup **66** (block **68**). If the CSR wishes to respond to a message that has not yet been opened or assigned, the CSR may click on a link **70** of a message that has a status of "Unopened" and "Unassigned". Upon clicking such a link, the message is retrieved from the database **16** (the database **16** being updated to indicate the message has been opened) and sent to the CSR computer **18** where it is displayed via the Web browser block **72**.

Upon clicking on an unassigned e-mail message to review, the CSR is given the option to either:

1.) assign the message to himself; or

2.) return to the queued message page FIG. **14** without assigning the message block **78**.

If the CSR does not wish to assign the message to himself, the CSR is returned to the queued message page. If the CSR wishes to assign the message to himself, the CSR clicks on the "Assign Message to Me" link. The database **16** is updated to indicate that the message has been assigned block **82**. Upon assigning the message, the CSR is sent another HTML page which contains text asking the CSR to assign a category to the message block **84**. See FIG. **15**. Upon assigning a category(s), the database **16** is updated to reflect which categories the message has been assigned. Once a category is assigned to the message, CSR is given the option to either respond to the message, refer the question to an expert, or not respond to the message block **86**.

If the CSR indicates that a response is not needed for a particular message, the CSR so indicates and the message is removed from the queued message table and the database is updated to indicate the message did not need a response block **88**.

If the CSR wishes to refer the message to an expert more suited to respond to the inquiry, the CSR clicks on the appropriate link. FIG. **5** illustrates a flowchart of the steps for referring a message to an expert. An HTML page is sent

to the CSR block **90** requesting expert referral that asks the CSR to select an expert to take the message (see FIG. **16** illustrating an example screen shot). The CSR then selects an expert and refers the message to the designated expert block **92** and **94**. The database **16** is then updated to indicate that the message has been referred to an expert and that it is pending response from that expert block **96**. Once the expert reviews and responds to the message, the database **16** is updated to indicate that the expert has responded to the message, i.e. "From Expert". An expert is preferably a CSR that has been given expert privileges or a designated expert outside the E-mail management system, as will be discussed below. Accordingly, the expert accesses the management system via a computer configured similarly to the CSR computer **18** (or if outside the E-mail management system, receives and replies to expert inquiry via standard Internet E-mail).

From the page illustrated in FIG. **15**, the CSR may wish to respond to an assigned message rather than referring it to an expert. FIG. **6** illustrates a flow chart depicting the steps needed for replying to an e-mail message. The CSR will have the option of providing a custom response, a standard response, or both, to the inquiry blocks **98–104**. The standard responses are stored and retrieved from the database **16**. They are preferably indexed, and retrieved, by the particular group, category, or keyword of the message (FIG. **17** illustrates a screen shot listing example standard responses). Providing standard responses to frequently asked customer questions reduces the time required to respond to many of the customer inquiries.

The system **10** is programmed to determine whether the response requires QA review block **106**, prior to the message being sent to the originating customer. As will be discussed in greater detail below, the administrator of the system may designate responses from certain CSRs as requiring QA review (discussed in greater detail below). In other words, all responses of designated CSRs must be given a QA review before their responses are sent to the customers. This feature allows the monitoring of CSR responses. This is especially important when training CSRs or when certain CSRs have a discourteous service record. If the response requires QA review, the response is flagged for QA review and the database **16** is updated to indicate that the stored response is to be reviewed and approved before being sent blocks **108** and **110**. If the response does not require QA review, the message is sent to the customer and the database **16** is updated to indicate that the message was responded to blocks **112–116**.

As discussed above, a CSR with QA privileges may opt to provide a QA review on the CSR responses as opposed to responding to a message block **54**. FIG. **7** illustrates a flow chart depicting the steps for providing a quality assurance review of e-mail responses. Once a CSR indicates that he wishes to review submitted CSR responses that are in queue, an HTML page is sent to the CSR computer **18** containing a table of responses that must be reviewed (the responses are retrieved from the database **16**) block **118**. FIG. **18** illustrates an example screen shot of a page listing messages to be given QA review.

The CSR may then click on a message to review block **128**. An HTML file is sent to the CSR computer **18** that, preferably, displays the text of the message, the response formulated by a CSR, and other message data block **122**. This data being retrieved from the database **16**. Upon QA review, the reviewing CSR may accept or deny the response block **124**. If the response is accepted, it is sent to the customer and the database **16** is updated to indicate that the

customer message was reviewed and replied to blocks **126, 128**. If the response is denied, the QA CSR sends the denied message back to the CSR with an explanation and a recommendation of how to respond to the inquiry. The database **16** is updated to indicate that the response has been reviewed and denied block **130**.

As previously discussed, a CSR, with administrative privileges, has the option to perform administrative duties on the electronic message management system. The administrative CSR may perform administrative functions by clicking on the appropriate link in the main navigational page block **38** as illustrated in FIG. **12**. Once the administrative CSR clicks on the administrative link, an HTML file of the main administrative options page is sent to the CSR block **132**, located at a CSR computer **18** (FIG. **19** illustrates an example screen shot of the main administrative options page of the present invention). FIG. **8** illustrates a flow chart depicting the steps for administering the electronic message system of the present invention.

From the main administrative options page FIG. **19**, the CSR may elect to update message groups (these groups preferably consisting of a number predetermined e-mail addresses), update CSR data, or update a group of messages block **134**. In updating CSR data, the administrative CSR may add new CSRs block **136** or change existing CSR privileges block **138**. FIG. **20** illustrates an example screen shot for adding CSRs and updating CSR privileges. Again, these screen shots are preferably HTML files, or pages, displayed with a Web browser located at the CSR computer **18**. As illustrated in FIG. **20**, the administrative CSR may change CSR passwords, update CSR privileges, and give permissions to selected groups the CSR may respond to. It is also preferred that the pages be linked to the database **16**, so that changes to the CSR data made on the page are automatically made in the database **16**, according to the methods previously discussed (i.e. The data is sent via the CSR computer **18** to the Web server **14** to the database **16**).

The administrative CSR may also choose to update a group, or a group address. FIG. **21** illustrates example screen shots displayed at the administrative CSR's computer **18** for updating group data. As illustrated in FIG. **21**, an administrative CSR may have the option block **140** to:

change the categories of a group block **142**, FIG. **21**;

assign CSRs to a group block **144**, FIG. **22**;

add or change standard responses of the group block **146**, FIG. **23**;

add or change the signatures of the group FIG. **24**; or

view a summary page of the group FIG. **25**.

It is preferred that these pages be linked to the database **16**, so that changes to the group data made on the page are automatically uploaded to the database **16**.

The administrative CSR may also grant other CSRs the privilege to view reports (Reports CSRs). The Reports CSRs may choose to view a report on a certain group. FIG. **9** illustrates a flow chart depicting the steps for requesting a report. In the preferred embodiment, the Reports CSRs have the option to view a report of a group block **148** based on either the:

category of messages block **150**;

time and/or day the messages were received block **152**;

messages of a group that did not need a response block **154**;

messages that were initiated by a CSR block **156**;

messages that are still pending block **158**; or

messages that have been reviewed by a QA CSR.

FIGS. **26–33** illustrate example screen shots displayed at the administrative CSR's computer **18** for viewing and printing group reports. The reports are created by retrieving the appropriate data from the database **16** and sending them to the CSR computer **18** to be displayed in a predetermined interface format, preferably created by HTML. As discussed, the requests for data sent from these pages are sent to the server **14** which interfaces these data requests to the database **16**.

It is also preferred that the present system allow the CSRs to initiate e-mail messages to the customers from their computers **18**. It is also preferred that the CSRs e-mail programs be linked to the database **16** so that the system may track and store:

i) which CSR sent the e-mail;

ii) when the e-mail was sent;

iii) where the e-mail was sent; and

iv) what the e-mail message consisted of.

This feature allows the system of the present invention to track CSR performance for CSR initiated e-mails similarly to the tracking of CSR responses to customer initiated messages.

Having shown and described a preferred embodiment of the invention, those skilled in the art will realize that many variations and modifications may be made to affect the described invention and still be within the scope of the claimed invention. It should be appreciated that the present system may be implemented by other data protocols, programming languages, and differing arrangements of certain programs and interfaces not discussed in the present application. Thus, many of the elements indicated above may be altered or replaced by different elements which will provide the same result and fall within the spirit of the claimed invention. It is the intention, therefore, to limit the invention only as indicated by the scope of the claims.

What is claimed is:

1. A system for managing e-mail messages comprising:

a first computer capable of receiving said e-mail messages;

a storage interfaced to said first computer, wherein said e-mail messages are forwarded to said storage from said first computer; and

wherein said e-mail messages are stored in said storage by predetermined attributes of said e-mail messages, and where said stored e-mail messages may be electronically accessed by use of at least one of said predetermined attributes.

2. A system according to claim **1**, wherein said storage is a database.

3. A method for third party managing of electronic messages received from a public or private network, comprising the steps of:

receiving electronic messages at a computer associated with said second party,

forwarding said electronic messages to a database;

structuring storage in said database of each one of said electronic messages by predetermined messages attributes; and

providing an interface for allowing said third party to have access to said database access from a computer located apart from said database.

4. The method according to claim **3**, further comprising the step of:

accepting a database access request from said third party.

5. A method according to claim **3**, further comprising the step of:

transmitting said requested data from said database to a computer of said third party; and

displaying, on said third party computer, said requested data.

6. A system for managing electronic messages received from a public or private network, comprising:

a first programmed computer, said first programmed computer programmed to accept electronic messages, said first programmed computer programmed with mail server software;

a database for storing said electronic messages according to predetermined message attributes;

a second programmed computer in electrical communication with said first programmed computer, wherein said second programmed computer is configured with Web server software;

a third programmed computer in electrical communication with said first programmed computer, configured with web browser software;

wherein said received electronic messages are forwarded by said first programmed digital computer to said database; and

wherein a customer service representative (CSR) may retrieve at least one of said stored electronic messages based on at least one of said predetermined message attributes, said customer service representative located at said third programmed digital computer.

7. A system for managing email messages from a plurality of customers, comprising:

a network computer adapted to direct email messages from said plurality of customers to a mail server;

a database adapted to store said email messages; and

an interface between said mail server and said database, said interface adapted to retrieve said email messages from said mail server and to structure said email messages for storage in said database in accordance with predetermined attributes; and

a customer service representative computer for accessing said email messages in said database.

8. The system of claim **7** wherein said predetermined attributes are selected from the group consisting of time received, status, message number, sender, and message subject.

9. The system of claim **8** wherein said predetermined attributes further comprise a response number and response information.

10. The system of claim **7** wherein said customer service representative computer is adapted to access email messages from said database in accordance with a group.

11. The system of claim **10** wherein said group comprises email messages to which a customer service representative may respond.

12. The system of claim **10** wherein said group comprises email messages that a customer service representative may review.

13. The system of claim **10** wherein said group comprises email messages with the same email address.

14. The system of claim **7** wherein said customer service representative computer is adapted to access email messages from said database in accordance with a browser.

15. The system of claim **7** wherein said interface is a program extension to said database.

16. The system of claim **7** wherein said interface comprises an Internet database connector file and an open database connectivity interface.

17. The system of claim **7** wherein said database is adapted to store customer inquiries from Web forms.

18. A method for managing email messages from a plurality of customers, comprising the steps of:

receiving said email messages from said plurality of customers;

transmitting said email messages from said plurality of customers to a mail server;

retrieving said email messages from said mail server; and

storing said email messages in a database in accordance with predetermined attributes; and

accessing said email messages in said database using a customer service representative computer.

19. The method of claim **18** wherein said predetermined attributes are selected from the group consisting of time received, status, message number, sender, and message subject.

20. The method of claim **19** wherein said predetermined attributes further comprise a response number and response information.

21. The method of claim **18** wherein the step of accessing said email messages in said database comprises the step of accessing said email messages in accordance with a group.

22. The method of claim **21** further comprising the step of responding to said email messages in said group.

23. The method of claim **21** further comprising the step of reviewing said email messages in said group.

24. The method of claim **21** wherein the step of accessing said email messages in accordance with a group comprises the step of accessing email messages with the same address.

25. The method of claim **19** further comprising the step of accessing said email messages in said database using a browser.

26. The method of claim **19** further comprising the step of storing in said database customer inquiries from Web forms.

* * * * *

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO.   : 6,415,290 B1
DATED   : July 2, 2002
INVENTOR(S)   : Botts et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Title page,
Title, "Massage" should be -- Message --.

Column 2,
Line 9, "system" should be -- systems --.

Column 3,
Line 53, "messages" should be -- messages --.

Column 10,
Line 61, "128" should be -- 120 --.

Signed and Sealed this

Sixth Day of May, 2003

JAMES E. ROGAN
Director of the United States Patent and Trademark Office